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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,193	05/09/2007	William C. Bushong	27860-31	3908

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EXAMINER	
YANCHUK, STEPHEN J	
ART UNIT	PAPER NUMBER
4131	

NOTIFICATION DATE	DELIVERY MODE
11/28/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,193	BUSHONG ET AL.	
	Examiner	Art Unit	
	STEPHEN YANCHUK	4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-8,12-16,19,24,27,29-31,38,41,42,45-47,49-52,59,64,164* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9-18-2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1,2,4,6-8,12-16,19,24,27,29-31,38,41,42,45-47,49-52,59,64 and 164.

HIGH CAPACITY ALKALINE CELL UTILIZING CATHODE EXTENDER

Examiner: S. Yanchuk SN: 10/582193 Art: 4131 November 6, 2008

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, 6-8, 12, 13, 16, 19, 24, 27, 29-31, 38, 41, 42, 46, 47, 49, 51, 52, 56, 59, 64, and 164 rejected under 35 U.S.C. 102(e) as being anticipated by Nanjundaswamy et al (PGPUB 2003/0211392).

Claims 1, 4, 7, 8, 12, 13 and 41 are rejected by Nanjundaswamy teaching a battery containing an anode, cathode, and separator contained in a housing [Paragraph 29]. The cathode layer is taught to have a manganese dioxide (primary active material) with silver copper oxides, $AgCuO_2$ or $Ag_2Cu_2O_3$ (Extender) [Abstract].

Claim 46, 49, 51, and 52 are rejected by figure 1 which shows a container (38, 20), a cathode in the container (70) with an active material (Manganese dioxide) as well as an extender (silver copper oxides) (72) [Abstract]. The discharge voltage is lower in the extender than the primary active material as shown in the rejection for claim 6. The

anode cover (20) also functions as the negative terminal of the cell and housing (30) at the closed end (38) functions as the positive terminal of the cell [Paragraph 23] .

Claims 2, 6, 16, 19, 47, 56, and 59 are rejected by the analysis of example 1 [Paragraph 34] being an electrode with MnO_2 and examples 4-6 [Paragraph 40-51], which use an electrode with MnO_2 and $AgCuO_2$. The discharge of current (3milliamps and 10milliamps) was constant in all experiments to measure the specific capacity and energy outputs. The results showed a specific capacitance 253 mAh/g for example 1 and 267-285mAh/g for examples 4-6 [Table 1]. This shows that the discharge capacity for the $AgCuO_2$ is higher than the example without (Instant claim 2, 16, 47, 56). It is inherent that the initial discharge voltage of the electrode comprised of $AgCuO_2$ must be lower than the electrode without to achieve the same capacitance (Instant claim 6).

Claims 19, 24, 59, and 64 are rejected by the teaching that the capacity of the anode divided by the theoretical capacity of the cathode actives is about 1 (Instant claims 19 and 59) [Paragraph 33]. The lithium anode theoretical maximum is 3860mAh/g [Paragraph 33] whereas zinc anode theoretical maximum is 820mAh/g [Instant application paragraph 58]. The numerator of the instant claim 24 and 64 would be higher in the Lithium prior art than the Zinc instant application. In order to satisfy the above statement of the capacity of the anode divided by the theoretical capacity of the cathode actives being about 1, the internal volume of the cell needs to be smaller (denominator) than the Zinc instant application case. The anode capacity/cell internal volume ratio of the Lithium cell prior art would have a result expected variable greater than .5Ah/cc.

Claim 164 is rejected by figure 1 and the rejection to claim 64. Figure 1 shows an anode (50) a cathode (70) and a separator plate (60).

Claim 27 and 29 are rejected by the teachings of the $AgCuO_2$ being admixed with the MgO_2 layer on the surface of the electrode [Abstract].

Claim 30, 31, and 38 are rejected by the teaching of adding graphite which is a form of activated carbon [Paragraph 28].

Claim 42 is rejected by Figure 1 which shows the extender (which can have a conductive agent as shown by paragraph 28) being disposed between the cathode and the container.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nanjundaswamy et al (PGPUB 2003/0211392) in view of claims 1 and 46.

Claim 45 is rejected by the teaching that Lithium batteries have a higher voltage and higher energy density than alkaline batteries. It was established that Li/MnO_2 (Lithium) out preformed Zn/MnO_2 (Alkaline) batteries. Lithium cells are able to be used in higher voltage and higher power demanding equipment like cameras, which alkaline cells can not. The difference between Alkaline and Lithium batteries is the anode

material, but they both comprise manganese dioxide as the cathode [Paragraph 3]. Therefore, it would have been obvious to one of ordinary skill in the art to have substituted the zinc anode for the lithium anode in the structure of the lithium battery described by Nanjudaswamy because it has been held that is obvious to substitute one known material for another known material each of which serves the same purpose. See MPEP 2144.06 II. A Zinc anode with the aforementioned cathode would give an alkaline battery that would meet the claimed structure.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanjundaswamy et al (PGPUB 2003/0211392) as applied to claim 1 above, and further in view of Boer et al (PGPUB 2004/0038131).

Nanjundaswamy teaches an electrochemical cell that consists of $M_xCu_yO_z$. This fails to teach an electrochemical cell that has another metal to make $AM_xCu_yO_z$.

Boer teaches a multi-layer electrochemical cell where one layer is $A_qM_{1+x}Mn_{1-x}O_4$. A can be Lithium and M can be Cu [Paragraph 16]. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the electrode layer of Boer having the formula $A_qM_{1+x}Mn_{1-x}O_4$ for the layer of $M_xCu_yO_z$ in Nanjundaswamy because each cathode are known materials. Adding Boer to Nanjundaswamy would have given predictable results by altering the specific capacity of the cathode actives.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN YANCHUK whose telephone number is (571)270-7343. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner
Art Unit 4131

/STEPHEN YANCHUK/
Examiner, Art Unit 4131